



## SEQUENCE LISTING

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<110> Chen, Lieping  
Bajorath, Jurgen

<120> ICOS Mutants

<130> 07039-331001

<140> US 10/072,622

<141> 2002-02-07

<160> 42

<170> FastSEQ for Windows Version 4.0

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<212> PRT

<213> Mus musculus

<400> 1

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			20					25					30		
Thr	Val	Leu	Arg	Gln	Thr	Asn	Asp	Gln	Met	Thr	Glu	Val	Cys	Ala	Thr
		35				40					45				
Thr	Phe	Thr	Glu	Lys	Asn	Thr	Val	Gly	Phe	Leu	Asp	Tyr	Pro	Phe	Cys
	50				55				60						
Ser	Gly	Thr	Phe	Asn	Glu	Ser	Arg	Val	Asn	Leu	Thr	Ile	Gln	Gly	Leu
65				70					75					80	
Arg	Ala	Val	Asp	Thr	Gly	Leu	Tyr	Leu	Cys	Lys	Val	Glu	Leu	Met	Tyr
			85					90						95	
Pro	Pro	Pro	Tyr	Phe	Val	Gly	Met	Gly	Asn	Gly	Thr	Gln	Ile	Tyr	Val
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Ile	Asp	Pro	Glu	Pro	Cys										
			115												

<210> 2

<211> 118

<212> PRT

<213> Rattus norvegicus

<400> 2

Val	Thr	Gln	Pro	Ser	Val	Val	Leu	Ala	Ser	Ser	His	Gly	Val	Ala	Ser
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Phe	Pro	Cys	Glu	Tyr	Ala	Ser	Ser	His	Asn	Thr	Asp	Glu	Val	Arg	Val
			20					25					30		
Thr	Val	Leu	Arg	Gln	Thr	Asn	Asp	Gln	Val	Thr	Glu	Val	Cys	Ala	Thr
		35				40					45				
Thr	Phe	Thr	Val	Lys	Asn	Thr	Leu	Gly	Phe	Leu	Asp	Asp	Pro	Phe	Cys
	50				55				60						
Ser	Gly	Thr	Phe	Asn	Glu	Ser	Arg	Val	Asn	Leu	Thr	Ile	Gln	Gly	Leu
65				70					75					80	
Arg	Ala	Ala	Asp	Thr	Gly	Leu	Tyr	Phe	Cys	Lys	Val	Glu	Leu	Met	Tyr

85 90 95  
 Pro Pro Pro Tyr Phe Val Gly Met Gly Asn Gly Thr Gln Ile Tyr Val  
 100 105 110  
 Ile Asp Pro Glu Pro Cys  
 115

<210> 3  
 <211> 118  
 <212> PRT  
 <213> Homo sapiens

<400> 3  
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 Phe Val Cys Glu Tyr Ala Ser Pro Gly Lys Ala Thr Glu Val Arg Val  
 20 25 30  
 Thr Val Leu Arg Gln Ala Asp Ser Gln Val Thr Glu Val Cys Ala Ala  
 35 40 45  
 Thr Tyr Met Met Gly Asn Glu Leu Thr Phe Leu Asp Asp Ser Ile Cys  
 50 55 60  
 Thr Gly Thr Ser Ser Gly Asn Gln Val Asn Leu Thr Ile Gln Gly Leu  
 65 70 75 80  
 Arg Ala Met Asp Thr Gly Leu Tyr Ile Cys Lys Val Glu Leu Met Tyr  
 85 90 95  
 Pro Pro Pro Tyr Tyr Leu Gly Ile Gly Asn Gly Thr Gln Ile Tyr Val  
 100 105 110  
 Ile Asp Pro Glu Pro Cys  
 115

<210> 4  
 <211> 118  
 <212> PRT  
 <213> Bos taurus

<400> 4  
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 20 25 30  
 Thr Val Leu Arg Gln Ala Asn Ser Gln Met Thr Glu Val Cys Ala Met  
 35 40 45  
 Thr Tyr Thr Val Glu Asn Glu Leu Thr Phe Ile Asp Asp Ser Thr Cys  
 50 55 60  
 Thr Gly Ile Ser His Gly Asn Lys Val Asn Leu Thr Ile Gln Gly Leu  
 65 70 75 80  
 Ser Ala Met Asp Thr Gly Leu Tyr Ile Cys Lys Val Glu Leu Met Tyr  
 85 90 95  
 Pro Pro Pro Tyr Tyr Val Gly Met Gly Asn Gly Thr Gln Ile Tyr Val  
 100 105 110  
 Ile Glu Pro Glu Pro Cys  
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<210> 5  
 <211> 119  
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 <213> Mus musculus

&lt;400&gt; 5

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Ser	Cys	Arg	Tyr	Ser	Tyr	Asn	Leu	Leu	Ala	Lys	Glu	Phe	Arg	Ala	Ser
			20					25					30		
Leu	Tyr	Lys	Gly	Val	Asn	Ser	Asp	Val	Glu	Val	Cys	Val	Gly	Asn	Gly
		35					40					45			
Asn	Phe	Thr	Tyr	Gln	Pro	Gln	Phe	Arg	Ser	Asn	Ala	Glu	Phe	Asn	Cys
	50					55					60				
Asp	Gly	Asp	Phe	Asp	Asn	Glu	Thr	Val	Thr	Phe	Arg	Leu	Trp	Asn	Leu
65					70					75					80
His	Val	Asn	His	Thr	Asp	Ile	Tyr	Phe	Cys	Lys	Ile	Glu	Phe	Met	Tyr
			85						90					95	
Pro	Pro	Pro	Tyr	Leu	Asp	Asn	Glu	Arg	Ser	Asn	Gly	Thr	Ile	Ile	His
			100					105						110	
Ile	Lys	Glu	Lys	His	Leu	Cys									
			115												

&lt;210&gt; 6

&lt;211&gt; 119

&lt;212&gt; PRT

&lt;213&gt; Rattus norvegicus

&lt;400&gt; 6

Val	Lys	Gln	Ser	Pro	Leu	Leu	Val	Val	Asp	Asn	Asn	Glu	Val	Ser	Leu
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Ser	Cys	Arg	Tyr	Ser	Tyr	Asn	Leu	Leu	Ala	Lys	Glu	Phe	Arg	Ala	Ser
			20					25					30		
Leu	Tyr	Lys	Gly	Val	Asn	Ser	Asp	Val	Glu	Val	Cys	Val	Gly	Asn	Gly
		35					40					45			
Asn	Phe	Thr	Tyr	Gln	Pro	Gln	Phe	Arg	Pro	Asn	Val	Gly	Phe	Asn	Cys
	50					55					60				
Asp	Gly	Asn	Phe	Asp	Asn	Glu	Thr	Val	Thr	Phe	Arg	Leu	Trp	Asn	Leu
65					70					75					80
Asp	Val	Asn	His	Thr	Asp	Ile	Tyr	Phe	Cys	Lys	Ile	Glu	Val	Met	Tyr
			85						90					95	
Pro	Pro	Pro	Tyr	Leu	Asp	Asn	Glu	Lys	Ser	Asn	Gly	Thr	Ile	Ile	His
			100					105						110	
Ile	Lys	Glu	Lys	His	Leu	Cys									
			115												

&lt;210&gt; 7

&lt;211&gt; 119

&lt;212&gt; PRT

&lt;213&gt; Bos taurus

&lt;400&gt; 7

Val	Lys	Gln	Ser	Pro	Met	Leu	Val	Val	Asn	Asn	Asn	Glu	Val	Asn	Leu
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Ser	Cys	Lys	Tyr	Thr	Tyr	Asn	Leu	Phe	Ser	Lys	Glu	Phe	Arg	Ala	Ser
			20					25					30		
Leu	Tyr	Lys	Gly	Ala	Asp	Ser	Ala	Val	Glu	Val	Cys	Val	Val	Asn	Gly
		35					40					45			
Asn	Phe	Ser	His	Pro	His	Gln	Phe	His	Ser	Thr	Thr	Gly	Phe	Asn	Cys
	50					55					60				
Asp	Gly	Lys	Leu	Gly	Asn	Glu	Thr	Val	Thr	Phe	Tyr	Leu	Lys	Asn	Leu
65					70					75					80

Tyr Val Asn Gln Thr Asp Ile Tyr Phe Cys Lys Ile Glu Val Met Tyr  
                                   85                                  90                                  95  
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                                   100                                  105                                  110  
 Val Lys Glu Gln His Phe Cys  
                                   115

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                                   20                                  25                                  30  
 Leu His Lys Gly Leu Asp Ser Ala Val Glu Val Cys Val Val Tyr Gly  
                                   35                                  40                                  45  
 Asn Tyr Ser Gln Gln Leu Gln Val Tyr Ser Lys Thr Gly Phe Asn Cys  
                                   50                                  55                                  60  
 Asp Gly Lys Leu Gly Asn Glu Ser Val Thr Phe Tyr Leu Gln Asn Leu  
 65                                  70                                  75                                  80  
 Tyr Val Asn Gln Thr Asp Ile Tyr Phe Cys Lys Ile Glu Val Met Tyr  
                                   85                                  90                                  95  
 Pro Pro Pro Tyr Leu Asp Asn Glu Lys Ser Asn Gly Thr Ile Ile His  
                                   100                                  105                                  110  
 Val Lys Glu Lys His Leu Cys  
                                   115

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 <213> Mus musculus

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                                   20                                  25                                  30  
 Glu Arg Glu Val Leu Cys Glu Leu Thr Lys Thr Lys Gly Ser Gly Asn  
                                   35                                  40                                  45  
 Ala Val Ser Ile Lys Asn Pro Met Leu Cys Leu Tyr His Leu Ser Asn  
                                   50                                  55                                  60  
 Asn Ser Val Ser Phe Phe Leu Asn Asn Pro Asp Ser Ser Gln Gly Ser  
 65                                  70                                  75                                  80  
 Tyr Tyr Phe Cys Ser Leu Ser Ile Phe Asp Pro Pro Pro Phe Gln Glu  
                                   85                                  90                                  95  
 Arg Asn Leu Ser Gly Gly Tyr Leu His Ile Tyr Glu Ser Gln Leu Cys  
                                   100                                  105                                  110

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<400> 10

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Gly	Gly	Gln	Ile 35	Leu	Cys	Asp	Leu 40	Thr	Lys	Thr	Lys	Gly 45	Ser	Gly	Asn
Thr	Val 50	Ser	Ile	Lys	Ser	Leu 55	Lys	Phe	Cys	His	Ser 60	Gln	Leu	Ser	Asn
Asn 65	Ser	Val	Ser	Phe 70	Phe	Leu	Tyr	Asn	Leu 75	Asp	His	Ser	His	Ala	Asn 80
Tyr	Tyr	Phe	Cys 85	Asn	Leu	Ser	Ile	Phe 90	Asp	Pro	Pro	Pro	Phe 95	Lys	Val
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 agcaac 66

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<400> 18  
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<210> 19  
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<400> 19  
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<210> 21  
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<220>  
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<400> 21  
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<220>

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<223> Primer

<400> 36

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<210> 37

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